

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
 AN 2002:958444 CAPLUS
 DN 138:18708
 ED Entered STN: 18 Dec 2002
 TI Manufacture of porous polyimide films for printed circuit boards
 IN Tahara, Shinji; Kawashima, Toshiyuki; Ikeda, Kenichi
 PA Nitto Denko Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B29C041-24
 ICS H05K001-03; H05K003-28; B29K079-00; B29K105-04; B29L007-00
 CC 76-14 (Electric Phenomena)
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002361661	A2	20021218	JP 2001-169254	20010605 <--
PRAI	JP 2001-169254		20010605		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002361661	ICM	B29C041-24
	ICS	H05K001-03; H05K003-28; B29K079-00; B29K105-04; B29L007-00

AB Porous polyimide film is manufactured by wet solidification of solution containing polyamic acid of weight average mol. weight (determined by gel permeation chromatog.) ≥ 8000 for preparation of a porous film, washing the film with water, and imidation of the film before the weight average mol. weight of the polyamic acid

becomes < 8000 . Porous polyimide films showing dielec. loss tangent ($\tan \delta$) of ≤ 0.0045 at 10 GHz are also claimed. The films are especially suitable as insulating layers in printed circuit boards used for high-frequency devices.

ST porous polyimide film insulator PWB; printed circuit board porous polyimide film; dielec polyimide film imidation polyamic acid

IT Porous materials
 (films; manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

IT Printed circuit boards
 (manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

IT Polyimides; uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

IT Polyamic acids
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
 (manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

IT Dielectric films
 Films
 (porous; manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

IT 26873-91-6P, 3,3',4,4'-Benzophenonetetracarboxylic acid dianhydride-4,4'-diaminodiphenyl ether-p-phenylenediamine copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of porous dielec. polyimide films for printed circuit boards by imidation of polyamic acid coatings)

RN 26873-91-6P

L8 ANSWER 2 OF 3 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2003-433200 [41] WPIX

DNN N2003-345693 DNC C2003-114851

TI Porous membrane manufacturing method for wiring board, involves starting imide processing of porous membrane, when average molecular weight of polyamic acid is in specific range.

DC A26 A32 A85 L03 V04

PA (NITL) NITTO DENKO CORP

CYC 1

PI JP 2002361661 A 20021218 (200341)* 6 B29C041-24 <--

ADT JP 2002361661 A JP 2001-169254 20010605

PRAI JP 2001-169254 20010605

IC ICM B29C041-24

ICS H05K001-03; H05K003-28

ICI B29K079:00, B29K105:04, B29L007:00

AB JP2002361661 A UPAB: 20030630

NOVELTY - The imide processing of the porous membrane is started, when the average molecular weight of the polyamic acid is more than 8000 by GPC measurement.

USE - For manufacturing porous membrane for wiring board for information communication apparatus.

ADVANTAGE - Porous membrane with improved mechanical strength is obtained, by starting the imide processing, when the average molecular weight of polyamic acid is in specific range.

Dwg.0/0

FS CPI EPI

FA AB

MC CPI: A05-J01B; A12-E07; L03-H04E1

EPI: V04-R03E; V04-R07P

L8 ANSWER 3 OF 3 JAPIO (C) 2005 JPO on STN

AN 2002-361661 JAPIO

TI METHOD FOR MANUFACTURING POROUS FILM FOR WIRING SUBSTRATE

IN TAWARA SHINJI; KAWASHIMA TOSHIYUKI; IKEDA KENICHI

PA NITTO DENKO CORP

PI JP 2002361661 A 20021218 Heisei

AI JP 2001-169254 (JP2001169254 Heisei) 20010605

PRAI JP 2001-169254 20010605

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002

IC ICM B29C041-24

ICS H05K001-03; H05K003-28

ICI B29K079:00, B29K105:04, B29L007:00

AB PROBLEM TO BE SOLVED: To provide a method for manufacturing a porous film for a wiring substrate capable of reducing a dielectric dissipation factor as compared with a polyimide porous film obtained by a conventional wet coagulation method and capable of also enhancing mechanical strength, and the porous film for the wiring substrate obtained thereby.

SOLUTION: In the method for manufacturing the porous film for the wiring substrate including a film forming process for forming the porous film by the wet coagulation method using a solution containing polyamic acid, a washing process for washing the obtained porous film with water and an imidation process for imidating the obtained porous film, the polyamic acid to be used has a weight average mol.weight die to GPC measurement of 8,000 or more and the imidation process is started before the weight average mol.weight of the polyamic acid due to GPC measurement is lowered to <8,000.

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